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EXAMINER

SIANGCHIN, KEVIN

ART UNIT PAPER NUMBER

2623

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/811,526

Applicant(s)

CHIKAZAWA ET AL.

Examiner

Kevin Siangchin

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Detailed Action

Drawings

Objections

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description. Fig. 1 lacks *contact section 23* referred to on page 9, line 13 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Objections

2. The disclosure is objected to because of the following informalities. On page 12, line 11, the applicant refers to *rivet holes 21*. It is apparent from Fig. 6 that the applicant intended to refer to *rivet holes 21a*. On page 15, line 32, the applicant refers to *hinge end portion 31*. It is apparent from Figs. 3 and 9-10 that the applicant intended to refer to *hinge end portion 32*. Appropriate correction is required.

Claims

Rejections Under U.S.C. § 112(2)

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 14 (lines 15-17) states, "...mounting plate for rigidly securing the fingerprint recognizing apparatus to the unit casing by means of screw". While this is a certainly a typographical error, it cannot be determined from

claim 14, when written as such, whether the applicant intends "...mounting ... by means of a screw" or "...mounting ... by means of screws". It is, therefore, unclear which of these defines the applicant's invention. The latter will be assumed for the remainder of this document.

Rejections Under U.S.C. § 103(a)

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-5, 7-11, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradney et al. (U.S. Patent 6,208,264), in view of Setlak et al. (U.S. Patent 5,940,526).

8. *The following is in regard to Claim 1.* Bradney et al. disclose a fingerprint recognizing apparatus (Bradney et al. Figs. 4a and 5a) comprising:

- a. A sensor section. See Bradney et al., Fig. 4a. The area indicated by reference number 58 is taken to be the sensor section, which includes an optical sensor 66. The sensor section is mounted on the apparatus body (the body of the apparatus being depicted in Bradney et al., Figs. 4a and 5a) for detecting a fingerprint of an operator. See Bradney et al., Figs. 4a and 5a.
- b. A cover, movable between an open position and a closed position (cover 86 in Fig. 4a of Bradney et al.), for protecting the sensor section in such a manner that an operator's finger can access the sensor section when the cover is in the open position. This should be apparent from Bradney et al. Figs. 4a and 5a.
- c. A contact section arranged on the apparatus body at a position where the operator's finger can easily come into contact therewith during an operator's action to open the cover. Refer to Bradney et al. Fig. 4a. This contact section can be taken to be the surface of the sensor section indicated by reference number 58. It is apparent from Fig. 4a that it is arranged on the apparatus body at a

position where the operator's finger can easily come into contact therewith during an operators action to open the cover.

The fingerprint recognizing apparatus of Bradney et al.'s teachings does not, however, include a contact section, as described above in item (c), that is electrically connected to the ground of the apparatus body.

9. Setlak et al. disclose a fingerprint sensor that provides electrostatic discharge (ESD) protection via a finger charge bleed means obtained by connecting a contact section of the sensor (section 53 of Setlak et al. Figs. 4-5) to ground (through an intermediate bleed resistor 104). See Setlak et al. Figs. 4-5 and column 3, lines 18-31 and column 6, lines 34-38. In particular, notice in Fig. 5 the network consisting of contact (electrode) 53 and bleed resistor 104 connected to ground. As one of ordinary skill in the art would recognize *ground* for such devices is typically an electrical connection to a metallic plate, foil, or shielding attached to the non-conductive enclosure housing the device. The enclosure, in this case, would be the apparatus body.

10. It would be straightforward for one of ordinary skill in the art to simply replace the fingerprint sensor depicted in Figs. 4a and 5a of Bradney et al. with the fingerprint sensor of Setlak et al., as they are functionally, dimensionally (sized to accommodate a human finger), and electrically similar. As indicated by Setlak et al. (Setlak et al. column 6, lines 55-58), their sensor would advantageously conserve power while protecting against destructive ESD, thereby providing a relatively inexpensive, yet robust and power-efficient fingerprint sensor. Given the straightforwardness of such a replacement and being motivated to incorporate the said advantageous features of Setlak et al.'s sensor into a fingerprint apparatus, such as that of Bradney et al., it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to replace the sensor replace the fingerprint sensor depicted in Figs. 4a and 5a of Bradney et al. with the fingerprint sensor of Setlak et al. In doing so, one would obtain an apparatus in accordance with claim 1.

11. *The following is in regard to Claim 2.* It should be clear from Figs. 4a and 5a of Bradney et al. that the fingerprint recognizing apparatus taught by Bradney et al. includes a cover (reference number 86) having one free end and another base end and is moved between the open and closed positions by means of a hinge provided at the base end of the cover. Therefore, given the discussion above, with regard to claim 1, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner previously described, is a fingerprint recognition apparatus, in accordance with claim 1, wherein the cover has one free end and

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another base end and is moved between the open and closed positions by means of a hinge provided at the base end of the cover. Such an apparatus is in accordance with claim 2.

12. *The following is in regard to Claim 3.* It should be clear from Bradney et al. Fig. 4a that Bradney et al. teach a fingerprint recognizing apparatus, wherein the contact section is arranged in a recess which is provided on the apparatus body at a position near to the free end of the cover when it is in the closed position. Therefore, given the discussion above, with regard to claim 2, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner described relative to claim 1, is a fingerprint apparatus, in accordance with claim 2, wherein the contact section is arranged in a recess which is provided on the apparatus body at a position near to the free end of the cover when it is in the closed position. Such a fingerprint recognizing apparatus is in accordance with claim 3.

13. *The following is in regard to Claim 4.* Note that Fig. 4a of Bradney et al. the free-end of the cover 86 is gently curved to form a "lip" indicated by reference number 50. Also notice from Fig. 5a that the lip 50 is such that the center of the cover 86 protrudes more outwardly than the respective side portions of cover 86. Therefore, given the discussion above, with regard to claim 2, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner described relative to claim 1, is a fingerprint apparatus, in accordance with claim 2, wherein the free end of the cover is gently curved in such a manner that a central portion thereof is protruded outwardly more than respective side portions thereof. Such a fingerprint recognizing apparatus is in accordance with claim 4.

14. *The following is in regard to Claim 5.* It should be clear from Bradney et al. Fig. 4a that the fingerprint recognition apparatus depicted therein includes a recess and contact section that are curved according to the recess profile of the recess. Again, the contact section is taken to be the surface of the surface of the sensor section indicated by reference number 58. Therefore, given the discussion above, with regard to claim 2, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner described relative to claim 1, is a fingerprint recognition apparatus, in accordance with claim 2, wherein the recess and the contact section are curved along with (according to) a curvature profiles of the recess. Such a fingerprint recognition apparatus is in accordance with claim 5.

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15. *The following is in regard to Claim 7.* Bradney et al. disclose an electrical unit including a fingerprint recognizing fingerprint recognizing apparatus (Bradney et al. Figs. 4a and 5a). The unit comprises:

- a. A unit casing. The casing of the electrical unit shown in Bradney et al. Figs. 4a and 5a constitutes the unit casing.
- b. A fingerprint recognizing apparatus mounted on the unit casing for detecting a fingerprint of an operator. See Bradney et al. Fig. 4a. Here, the fingerprint recognizing apparatus is taken to be the recessed region, circumscribed by the elliptical curve indicated by reference number 62, sensor 66, and cover 86. This fingerprint apparatus comprise the following elements:
 - i. A sensor section. See Bradney et al., Fig. 4a. The area indicated by reference number 58 is taken to be the sensor section, which includes an optical sensor 66. The sensor section is mounted on the apparatus body (the body of the apparatus being depicted in Bradney et al., Figs. 4a and 5a) for detecting a fingerprint of an operator. See Bradney et al., Figs. 4a and 5a.
 - ii. A cover, movable between an open position and a closed position (cover 86 in Fig. 4a of Bradney et al.), for protecting the sensor section in such a manner that an operator's finger can access the sensor section when the cover is in the open position. This should be apparent from Bradney et al. Figs. 4a and 5a.
 - iii. A contact section arranged on the apparatus body at a position where the operator's finger can easily come into contact therewith during an operators action to open the cover. Refer to Bradney et al. Fig. 4a. This contact section can be taken to be the surface of the sensor section indicated by reference number 58. It is apparent from Fig. 4a that it is arranged on the apparatus body at a position where the operator's finger can easily come into contact therewith during an operators action to open the cover.

The fingerprint recognizing apparatus of Bradney et al.'s teachings does not, however, include a contact section, as described above in item (iii), that is electrically connected to the ground of the unit casing.

13. Setlak et al. disclose a fingerprint sensor that provides electrostatic discharge (ESD) protection via a finger charge bleed means obtained by connecting a contact section of the sensor (section 53 of Setlak et al. Figs. 4-5) to

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ground (through an intermediate bleed resistor 104). See Setlak et al. Figs. 4-5 and column 3, lines 18-31 and column 6, lines 34-38. In particular, notice in Fig. 5 the network consisting of contact (electrode) 53 and bleed resistor 104 connected to ground. As one of ordinary skill in the art would recognize *ground* for such devices is typically an electrical connection to a metallic plate, foil, or shielding attached to the non-conductive enclosure housing the device. The enclosure, in this case, would be the unit casing.

14. It would be straightforward for one of ordinary skill in the art to simply replace the fingerprint sensor depicted in Figs. 4a and 5a of Bradney et al. with the fingerprint sensor of Setlak et al., as they are functionally, dimensionally (sized to accommodate a human finger), and electrically similar. As indicated by Setlak et al. (Setlak et al. column 6, lines 55-58), their sensor would advantageously conserve power while protecting against destructive ESD, thereby providing a relatively inexpensive, yet robust and power-efficient fingerprint sensor. Given the straightforwardness of such a replacement and being motivated to incorporate the said advantageous features of Setlak et al.'s sensor into a fingerprint apparatus, such as that of Bradney et al., it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to replace the sensor replace the fingerprint sensor depicted in Figs. 4a and 5a of Bradney et al. with the fingerprint sensor of Setlak et al. In doing so, one would obtain an electrical unit in accordance with claim 7.

15. *The following is in regard to Claim 8.* It should be clear from Figs. 4a and 5a of Bradney et al. that the fingerprint recognizing apparatus taught by Bradney et al. includes a cover (reference number 86) having one free end and another base end and is moved between the open and closed positions by means of a hinge provided at the base end of the cover. Therefore, given the discussion above, with regard to claim 7, the electrical unit, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner previously described, is an electrical unit, in accordance with claim 1, wherein the cover has one free end and another base end and is moved between the open and closed positions by means of a hinge provided at the base end of the cover. Such an electrical unit is in accordance with claim 8.

16. *The following is in regard to Claim 9.* It should be clear from Bradney et al. Fig. 4a that Bradney et al. teach a fingerprint recognizing apparatus, wherein the contact section is arranged in a recess which is provided on the apparatus body at a position near to the free end of the cover when it is in the closed position. Therefore, given the discussion above, with regard to claim 8, the electrical unit, obtained by combining the teachings of Bradney et

al. and Setlak et al. in the manner described relative to claim 7, is an electrical unit, in accordance with claim 8, wherein the contact section is arranged in a recess which is provided on the unit casing at a position near to the free end of the cover when it is in the closed position. Such an electrical unit apparatus is in accordance with claim 9.

17. *The following is in regard to Claim 10.* Note that Fig. 4a of Bradney et al. the free-end of the cover 86 is *gently curved* to form a “lip” indicated by reference number 50. Also notice from Fig. 5a that the lip 50 is such that the center of the cover 86 protrudes more outwardly than the respective side portions of cover 86. Therefore, given the discussion above, with regard to claim 9, the electrical unit, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner described relative to claim 7, is an electrical unit, in accordance with claim 9, wherein the free end of the cover is gently curved in such a manner that a central portion thereof is protruded outwardly more than respective side portions thereof. Such an electrical unit is in accordance with claim 10.

18. *The following is in regard to Claim 11.* It should be clear from Bradney et al. Fig. 4a that the fingerprint recognition apparatus depicted therein includes a recess and contact section that are curved according to the recess profile of the recess. Again, the contact section is taken to be the surface of the surface of the sensor section indicated by reference number 58. Therefore, given the discussion above, with regard to claim 10, the electrical unit, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner described relative to claim 7, is an electrical unit, in accordance with claim 10, wherein the recess and the contact section are curved along with (according to) a curvature profiles of the recess. Such an electrical unit is in accordance with claim 11.

19. *The following is in regard to Claim 13.* As shown above with regard to claim 7, the teachings of Bradney et al. and Setlak et al. can be combined in such a way as to satisfy all limitations of claim 7. It was noted above that Setlak et al. disclose a fingerprint sensor that provides electrostatic discharge (ESD) protection via a finger charge bleed means obtained by connecting a contact section of the sensor (section 53 of Setlak et al. Figs. 4-5) to ground (through an intermediate bleed resistor 104).

20. While Setlak et al. do not explicitly show the attachment of the contact section to a ground contact plate rigidly connected to the unit casing, the usage of such plates for the purposes of grounding circuit elements is standard practice in the design and construction of electrical devices. The Examiner takes Official Notice that, at the time of the applicant's claimed invention, it was well-known, in the field of electrical device design, to ground circuit elements or electrical devices by attaching them to a ground plate attached to the enclosure housing the

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electrical devices or the circuit composed of said elements. An example is the chassis ground, often taking the form of a metallic plate, attached to housing (chassis) of a computer. Ground plates, such as these, provide a reference (zero) voltage against which all voltages in the system are established and measured. In the case of "self-contained" devices (i.e. those that may not have a direct connection to an *earth* ground), such as laptops or the fingerprint recognizing apparatus discussed here, utilizing a ground plate advantageously provides a means to ground electrical components such as the fingerprint sensor of Setlak et al. (necessary for their proper function) without a direct electrical connection to the earth. Clearly, this promotes the portability of the device.

21. It would be well within the capability of one of ordinary skill in the art to introduce a grounding plate into the electrical unit obtained by combining the teachings of Bradney et al. and Setlak et al., in the manner described above relative to claim 7, by attaching it rigidly to the unit casing of the electrical unit (so as to limit the potential of dislodging it), and to use it to ground the contact section of the fingerprint sensor. Given the simplicity of such a modification, the demonstrated usage of grounding plates in the industry, and the fact that portable, self-contained devices require such a means for grounding, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to introduce a grounding plate into the electrical unit obtained by combining the teachings of Bradney et al. and Setlak et al., in the manner described above relative to claim 7, by attaching it rigidly to the unit casing of the electrical unit (so as to limit the potential of dislodging it), and to use it to ground the contact section of the fingerprint sensor. In doing so one would obtain an electrical unit that conforms to the limitations of claim 13.

22. *The following is in regard to Claim 14.* The Examiner takes Official Notice that, at the time of the applicant's claimed invention, the usage of mounting plates to mount electronic devices to casings or enclosures via a screw(s) was well known. Mounting plates have the advantage that the pressure(s) of the screw(s) is distributed over the area encompassed by the plate. Among other things, this stabilizes the mounted component, allows the mounted component to be flush with the mounting surface of the casing (e.g. the top face of the electrical unit shown in Fig. 4a. coplanar to elliptical curve indicated by reference number 62), and provides more uniform pressure to the surface of the mounted component, thereby reducing potential damage (e.g. cracking) of the component when pressure is applied during the mounting process.

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23. It would be straightforward for one of ordinary skill in the art to attach the fingerprint recognition apparatus to the unit casing by using a mounting plate secured by screws. Given the ease with which this can be done and the advantage of using such plates, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to secure the fingerprint recognition apparatus to the unit casing using mounting plate fixed in place by means of screws. In doing so, one obtains an electrical unit, in accordance with claim 7, further comprising a mounting plate for rigidly securing the fingerprint recognizing apparatus to the unit casing by means of screws. Such an electrical unit satisfies all limitations of claim 14.

24. Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradney et al., in view of Setlak et al. as applied to claim 1 above, and in further view of Gainey (U.S. Patent 6,382,416).

25. *The following is in regard to Claim 6.* As discussed above with regard to claim 1, a fingerprint recognition apparatus can be obtained by combining the teachings of Bradney et al. and Setlak et al. such that it satisfies all the limitations of claim 1. While the "lip" 50 at the end of cover 86 depicted in Fig. 4a of Bradney et al. can presumably serve a locking function, Bradney et al. do not explicitly state its purposes as such, nor does Fig. 4a depict (or Bradney et al.'s disclosure state) a secondary engaging member. Therefore, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner discussed relative to claim 1, does not include a locking means for locking the cover in its closed position, the locking means comprising:

- a. a first engaging member provided at the free end of the cover, and
- b. second engaging member provided at a position corresponding to the first engaging member so that the first and second engaging member are mutually engaged with each other when the cover is in its closed position.

26. Gainey discloses fingerprint recognition apparatus (e.g. Gainey Figs. 3C and 4A) consisting of a locking means (i.e. looped latch lock 34 and the engaging portion of cover 32 depicted in Fig. 3C of Gainey – see also column 2, lines 34-38 and column 5, lines 38-55) used to lock, in a closed position, a movable hinged cover (e.g. Gainey Fig. 3C reference number 32), which protects the fingerprint recognition sensor (e.g. Gainey Fig. 4A,

reference number 28). See, for example, Fig. 3C of Gainey and column 5, lines 38-55. This locking means includes of the following elements:

- a. A first engaging member provided at the free end of the cover. Observe, in Fig. 3C of Gainey, the lip at the end of cover 32 opposite to hinge 36 (i.e. the free end). This lip engages the latch lock 34 and thus, for the purposes of this discussion, constitutes a *first* engaging member.
- b. Second engaging member provided at a position corresponding to the first engaging member so that the first and second engaging member are mutually engaged with each other when the cover is in its closed position. This is evident from the operation of the latch lock 34 illustrated in Fig. 3C of Gainey and further described in column 5, lines 38-55. This latch lock, since it mutually engages the first engaging member, constitutes a *second* engaging member.

27. Given the structural similarities of the fingerprint recognition apparatus of Bradney et al. and that of Gainey, it would be a simple exercise for one of ordinary skill in the art to incorporate the locking means taught by Gainey into the fingerprint recognition apparatus of Bradney et al. Clearly, the addition of the locking means secures the cover in the closed position more firmly, thereby further protecting the delicate sensor from inadvertent exposure to potentially harmful entities or forces. Given the simplicity of such a modification and motivated to provide a more robust fingerprint recognition apparatus, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to incorporate the locking means taught by Gainey into the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. with those of Setlak et al., in the manner discussed above relating to claim 1. In doing so, one would obtain a fingerprint recognizing apparatus that is in accordance with claim 6.

28. *The following is in regard to Claim 12.* As discussed above with regard to claim 7, a fingerprint recognition apparatus can be obtained by combining the teachings of Bradney et al. and Setlak et al. such that it satisfies all the limitations of claim 7. While the "lip" 50 at the end of cover 86 depicted in Fig. 4a of Bradney et al. can presumably serve a locking function, Bradney et al. do not explicitly state its purposes as such, nor does Fig. 4a depict (or Bradney et al.'s disclosure state) a secondary engaging member. Therefore, the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. and Setlak et al. in the manner discussed relative to claim 7, does not include a locking means for locking the cover in its closed position, the locking means comprising:

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- a. a first engaging member provided at the free end of the cover, and
- b. second engaging member provided at a position corresponding to the first engaging member so that the first and second engaging member are mutually engaged with each other when the cover is in its closed position.

29. Gainey discloses fingerprint recognition apparatus (e.g. Gainey Figs. 3C and 4A) consisting of a locking means (i.e. looped latch lock 34 and the engaging portion of cover 32 depicted in Fig. 3C of Gainey – see also column 2, lines 34-38 and column 5, lines 38-55) used to lock, in a closed position, a movable hinged cover (e.g. Gainey Fig. 3C reference number 32), which protects the fingerprint recognition sensor (e.g. Gainey Fig. 4A, reference number 28). See, for example, Fig. 3C of Gainey and column 5, lines 38-55. This locking means includes of the following elements:

- a. A first engaging member provided at the free end of the cover. Observe, in Fig. 3C of Gainey, the lip at the end of cover 32 opposite to hinge 36 (i.e. the free end). This lip engages the latch lock 34 and thus, for the purposes of this discussion, constitutes a *first* engaging member.
- b. Second engaging member provided at a position corresponding to the first engaging member so that the first and second engaging member are mutually engaged with each other when the cover is in its closed position. This is evident from the operation of the latch lock 34 illustrated in Fig. 3C of Gainey and further described in column 5, lines 38-55. This latch lock, since it mutually engages the first engaging member, constitutes a *second* engaging member.

30. Given the structural similarities of the fingerprint recognition apparatus of Bradney et al. and that of Gainey, it would be a simple exercise for one of ordinary skill in the art to incorporate the locking means taught by Gainey into the fingerprint recognition apparatus of Bradney et al. Clearly, the addition of the locking means secures the cover in the closed position more firmly, thereby further protecting the delicate sensor from inadvertent exposure to potentially harmful entities or forces. Given the simplicity of such a modification and motivated to provide a more robust fingerprint recognition apparatus, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to incorporate the locking means taught by Gainey into the fingerprint recognition apparatus, obtained by combining the teachings of Bradney et al. with those of Setlak et al., in the manner discussed above relating to claim 7. In doing so, one would obtain an electrical unit that is in accordance with claim 12.

31. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holehan (U.S. Patent 6,337,918), in view of Setlak et al.

32. *The following is in regard to Claim 15.* Holehan discloses an information processing unit (i.e. the laptop shown in Holehan Fig. 1) including a fingerprint recognizing apparatus (i.e. the laptop depicted in Holehan Figs. 1).

The information processing unit further comprises:

- a. A unit body (i.e. body of laptop shown in Holehan Fig. 1) comprising:
 - i. A data input section (e.g. keyboard 18 of Holehan Fig. 1)
 - ii. Data processing section for processing data input from the data input section. This is an inherent feature of a laptop and is generally contained in the unit body. The internal computing components (e.g. CPU, RAM, I/O bus, hard disk, etc.) contained therein would, for example, constitute a data processing section.
- b. A display section (i.e. monitor 14 of Holehan Fig. 1) for displaying letters and images.
- c. A fingerprint recognizing apparatus (i.e. the laptop depicted in Holehan Figs. 1) comprising:
 - i. A sensor section (i.e. Holehan Figs. 1-2, reference number 16).
 - ii. A cover movable between an open position and a closed position for protecting the sensor section. Clearly, the top section of the laptop pivots between an open position and closed position. It also serves the purpose of protecting the sensor section.
 - iii. A contact section (Holehan Fig. 2 reference numbers 21-22) arranged in a position on the unit casing where an operator's finger can easily come into contact therewith when the cover is opened by the operator. Notice from Holehan Fig. 1 that the contact section is arranged in a position on the unit casing such that an operator's finger can easily come into contact therewith when the cover is opened by the operator.

Holehan, however, does not teach or suggest that the contact section of the fingerprint recognizing apparatus should be connected to the ground of the unit casing.

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33. Setlak et al. disclose a fingerprint sensor that provides electrostatic discharge (ESD) protection via a finger charge bleed means obtained by connecting a contact section of the sensor (section 53 of Setlak et al. Figs. 4-5) to ground (through an intermediate bleed resistor 104). See Setlak et al. Figs. 4-5 and column 3, lines 18-31 and column 6, lines 34-38. In particular, notice in Fig. 5 the network consisting of contact (electrode) 53 and bleed resistor 104 connected to ground. As one of ordinary skill in the art would recognize *ground* for such devices is typically an electrical connection to a metallic plate, foil, or shielding attached to the non-conductive enclosure housing the device. The enclosure, in this case, would be the unit casing.

34. It would be straightforward for one of ordinary skill in the art to simply replace the fingerprint sensor 16 depicted in Figs. 1-2 of Holehan with the fingerprint sensor of Setlak et al., as they are functionally, dimensionally (sized to accommodate a human finger), and electrically similar. As indicated by Setlak et al. (Setlak et al. column 6, lines 55-58), their sensor would advantageously conserve power while protecting against destructive ESD, thereby providing a relatively inexpensive, yet robust and power-efficient fingerprint sensor. Given the straightforwardness of such a replacement and being motivated to incorporate the said advantageous features of Setlak et al.'s sensor into a fingerprint apparatus, such as that of Holehan, it would have been obvious to one of ordinary skill in the art, at the time of the applicant's claimed invention, to replace the sensor replace the fingerprint sensor depicted in Figs. 1-2 of Holehan with the fingerprint sensor of Setlak et al. In doing so, one would obtain a fingerprint recognition apparatus and, hence, an information processing unit in accordance with claim 7.

Citation of Relevant Prior Art

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

[1] U.S. Patent 6,686,546. Chui.

[2] U.S. Patent Publications 2003/0107097, 2002/0097059, 2003/0035572, 2003/0136043.

References [1] and [2] all disclose fingerprint recognition or biometric apparatuses wherein the contact sections are connected to ground for the purposes of reducing ESD.

[3] U.S. Patent 6,088,585. Schmitt et al.

[4] U.S. Patent 6,509,847. Anderson.

References [3] and [4] all disclose fingerprint recognition apparatus incorporated into information processing units (e.g. a laptop or cell-phone).

[5] U.S. Patent 5,218,760. Colton et al.

[6] U.S. Patent 6,542,997. Rolls et al.

[7] U.S. Patent 6,684,271. Scholder et al.

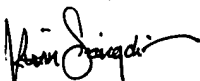
References [5] – [7] all disclose some form of ground plates attached to computer enclosures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Siangchin whose telephone number is (703)305-7569. The examiner can normally be reached on 9:00am - 5:30pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Examiner
Art Unit 2623

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